SEARCHING FOR OPPORTUNISTIC POLITICAL BUSINESS CYCLES IN TURKEY

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ABSTRACT

The literature on political business cycles (PBC) suggests that incumbent governments manipulate the economy for political reasons, in particular for winning elections. Accordingly, it is argued that incumbent governments manipulate the economy to create better economic conditions in the pre-election period with declining unemployment and increasing growth rates of the economy and inflation to enhance the likelihood of re-election. The theory suggests that post-election periods experience contraction in the economy to offset the adverse impact of expansionary policy in the pre-election period. The main argument is that due to the myopic nature of individual voters and their retrospective voting attitudes, governments can manipulate the economy to create such conditions to increase their popularity. The theoretical model of this opportunistic PBC is based on Nordhaus theoretic (1975).

This study aims to investigate the existence of PBC in Turkey by modelling fiscal and monetary policy instruments within traditional opportunistic Nordhausian theoretic. The econometric analysis is based on Nordhaus theoretic with exogenously determined elections. The fiscal and monetary policy instruments are modelled within intervention analysis with quarterly data for the 1980-2002 and 1986-2002 periods. The econometric time-series analysis provided unequivocally strong evidence for the presence of PBC in fiscal and monetary policy instruments in Turkey.

In light of the evidence yielded, the presence of politically-manufactured fiscal and monetary policy cycles has been established in the case of Turkey (mainly) in the period 1980-2002. This implies that incumbent governments in Turkey have used elections to create PBC in their attempts to *buy votes* for winning elections or to enhance their chances of re-election. The research, hence, vindicates the Nordhausian theoretic or model in the case of a developing country, namely in Turkey.

Keywords: Political business cycles, opportunistic business cycles, Nordhaus model, elections, fiscal and monetary policies, autoregression analysis, time series analysis, Turkey.

JEL Classification: D72; E5; E6; H2; H3

> "*In Turkey, as elsewhere, political imperatives generally dominate economic imperatives, which presents the government with a fundamental dilemma.*"
>
> Önis & Riedel (1993: 2)

> "*The nature of electoral competition [in Turkey] was some degree responsible for the build up of macroeconomic instability*"
>
> Önis (1997: 43)

> "*It seemed, in fact, that Turkey's most serious economic problem was actually political and that it would remain with her for may years to come...*"
>
> Hale (1981: 261)

1.1. INTRODUCTION

Recent developments in political economics and public choice have led to a fresh understanding of the mutual interaction between the economy and politics. As a result, the interaction between macroeconomic developments and political events has been the subject of a number of econometric and theoretical studies. One of the most attractive research areas has been the modelling of the interaction between polity and economy, or political business cycles (henceforth 'PBC'). PBC implies that governments as self-maximising units attempt to stir the economy in favour of increasing their popularity so that they can remain in government through re-election. It is indeed assumed that economic events do affect political events and vice-versa.

The empirical studies on the interaction between politics and economics have focused on two issues; the extent to which economic conditions affect voter behaviour and the degree to which the political environment affects the government's economic policies. In modelling these, some restrictive assumptions have been made by researchers. As a result some of the research has successfully demonstrated the existence of politically motivated business cycles. However others, by assuming different assumptions and hypotheses, have proved otherwise.

Although it is true that there are a number of empirical studies on developing countries, it is a fact that a very large part of the PBC empirical works have focused on western democracies. While it is true that there are empirical and data related constraints, the very nature of politics, namely the non-existence of liberal democracies, in most of the developing world may have been seen as a major institutional and theoretical constraint. This paper is attempts to search for the presence of PBC in Turkey, which is a developing country in terms of its economy and importantly in terms of its democracy. Despite the real nature and consequences of its institutions, it is a fact that democratic institutions do exist and functions in Turkey. The existence of multi-party politics within its democratic framework paves the way for the political manipulation of the economy, which is modelled and empirically searched in the following sections.

1.2. NORDHAUS THEORETIC OF PBC MODEL

Nordhaus' model of politico-economic interaction paved the way to the publication of many, theoretical and empirical studies. It remains one of the seminal works in the empirical construction of PBC literature.

Among the traditional opportunistic models, in particular the PBC model developed by Nordhaus (1975), it is suggested that opportunistic governments pursue policies for manipulating the economy for political purposes over the course of their entire term in government. In other words, Nordhaus' (1975) study provides a PBC model in which governments always engage in creating PBC during their terms in office, and as a result politically-oriented business cycles become perpetuated processes, and this provides unintended support to the Marxist explanation of business cycles in a capitalist environment. Due to such structural features, the Nordhaus theoretic can be utilised to qualify PBC prior to elections, in addition to capturing PBC during the entire term of a government.

Nordhaus limits the application of his study to democratic countries, which hold regular elections for political office, namely government. In his model, he implicitly brings an organic understanding of the state into the framework by ignoring the social welfare function when he assumes that in a democratic society's political framework the economic policies of the incumbent governments are targeted to win the elections. Thus, he constructs his model along 'rational' lines, but also an opportunistic traditional point of reference. In other words, he assumes the rational nature of market behaviour in polity within traditional political business cycle assumptions.

1.2.1. Assumptions of the Nordhaus Theoretic

The assumptions of the Nordhaus Theoretic or Model can best be explained by the frameworks presented by Alesina et al (1991: 3-4), Alesina and Roubini (1992: 665), Alesina et al (1993: 4-5), and Alesina et al (1997: 17-22).

i. The economy can be described by an expectations-augmented Phillips Curve

Like other models of PBC, Nordhaus forms his model on the Phillips Curve macroeconomic trade-off between inflation and unemployment. However, Nordhaus utilises the expectations-augmented version of the Phillips Curve.

ii. Voters are retrospective and myopic

The model assumes that when voters cast their vote they judge the incumbent government by evaluating positively high growth, low unemployment and low inflation, but by heavily discounting past observations.

iii. Expectations of the voters are adaptive

Nordhaus (1975: 174) assumes that the behaviour of voters in forming their expectations is 'adaptive', and hence their expectations of the performance of government or the prospect of the economy are formed adaptively. This implies that in forming their expectations for economic policies, individuals utilise the past actual values and the most recent actual values of economic variables as an index for government performance. Thus, individual voters are retrospective.

iv. Politicians are opportunistic

The self-interest of the politicians is dominated by the sole objective of remaining in the office. By establishing an analogy between market and polity, the behaviour of politicians is perceived as "rational behaviour" (Nordhaus, 1975: 174). As a result of such rationality, politicians attempt to manipulate economic policies to ensure their re-election. Manipulating the economy through contractionary and expansionary economic policies, as discussed above, provide the government with a better chance of being re-elected.

v. Politicians control a policy instrument

To be able to manipulate the public during an election through the use of fiscal and monetary policies, such policies should have direct impact on the individuals. This can happen when such policies alter aggregate demand, as predicted by Keynesian economic theory. As Alesina et al (1991: 3-4; and 1993: 4-5) argue "politicians control a policy instrument which directly effects aggregate demand".

vi. The timing of elections is exogenously fixed

The issue surrounding the timing of elections is not entirely an unambiguous issue. Alesina et al (1991 and 1993) and Alesina and Roubini (1992) suggest that Nordhaus' model is based on exogenously determined election timing. However, this assumption has to be modified to fit the election determination style of each country for which the model is applied. In most of the other countries including the European democracies, other than the USA, the election date is not fixed, thus endogenously set as incumbent governments have the advantage of determining the timing of the election within constitutional limits. As a result, endogenously set election dates as a strategy facilitates the possible return of the incumbent government into office after the election.

1.2.2. Modelling Endogenously Set Election Dates

Nordhaus (1975) does not distinguish endogenous and exogenous election timing, and provides empirical evidence for both cases in investigating the presence of PBC in various countries. However, the way the election date is set may have a deterministic effect on the predictability of the model.

Some studies, for instance Nordhaus (1975), Paldam (1979 and 1983) and Soh (1986), attempt to investigate the Nordhaus model in various cases without making the setting of the election date as a particular issue. However, other studies are convinced that such a difference should be distinguished and taken into account. Such critical studies extend analysis of the model to see if estimating the model according to the way the election date is set makes any difference. They further suggest that the failure of the model could in some cases be attributed to the fact that such a differentiation was not considered.

Lachler (1982) argues that where there is no imposition by the constitution to hold elections by a fixed date, elections can be called earlier than normally scheduled due to either the opportunistic nature of politics or due to other political reasons. In addition to political and social reasons, parliament can be dissolved when the incumbent government calls for an election. In such a case, only the government would know the expected date of the election. This implies that in those countries with such constitutional provisions, governments are endowed with an important instrument to determine the date of an election to coincide with the period when their performance in the economy is improved.

As a result, governments strategically call for early elections, particularly in periods of better economic conditions for election profiteering. Consequently, as Lachler (1982) suggests, under such circumstances politically created business cycles are a reality and are more evident in terms of strength and uniformity. Ginsburgh and Michel (1983) relate such an outcome to the uncertainty about the term a party remains in government. Because they argue that under conditions of incumbent uncertainties, politically-motivated business cycles would be less visible or less evident. In other words, when a government does not feel comfortable in the new term, as there might be some uncertainties such as having a fragile majority and hence calling elections much earlier than it is legislated for, then the economy will not be contracted after the election, although it is expanded before the election to create a myopic environment for election profiteering. Under such circumstances, a government may wish to remain popular to insure itself against such uncertainty. It should be stated that such a consequence contradicts Nordhaus' predictions, or at best is not considered by Nordhaus.

Among other studies, Ito (1990) introduced endogenously determined election timing into the Nordhaus model. According to his modification, an incumbent government would call an election or unscheduled election only when the state of the economy is in its favour, or when growth is high. Therefore, he defines the probability of calling an early election as an increasing function of high economic growth. However, by taking into account the above-mentioned assumption, related to the limitation of the government in manipulating the economy, the importance of economic performance of the private sector is introduced to the model, as due to the uncertainty created by the endogenously fixed election date, the government cannot manipulate the economy with certainty. In other words, "[t]he incumbent government does not manipulate the economy, but waits for positive non-government sector supply shocks (high growth, low inflation) to call an election" (Ito and Park, 1988: 234). Ito and Park (1988: 234) name this as "opportunistic cabinet hypothesis", or OCH. It is obvious that the predictions of the OCH differ from the predications of the traditional Nordhaus model.

Ito and Park (1988) introduce non-economic reasons for unscheduled elections, such as the time elapsed since the last election (TSLE). Since governments are bound by constitutional terms, when the entire government term elapses, elections must take place. However, when elections get closer, the possibility of catching better economic conditions, or high economic growth, declines. Therefore, against such uncertainty, governments call unscheduled elections whenever the economy is strong within the terms of the incumbent government by taking into account the fact that delaying elections reduces the probability of finding better economic conditions. They name this "manipulative cabinet hypothesis" (MCH), which hypothesises that election timing is determined by non-economic reasons, and governments use policy instruments to manipulate the economy prior to elections in the parliamentary system. Thus, MCH is an extended Nordhaus model with endogenous election timing.

With regards to Turkey, the Turkish constitution does not impose a fixed time for an election but requires elections to be held every five years after an election. However, the constitution provides the incumbent government with the right to call for an early election. This provides a golden opportunity for governments to determine the election date, and hence choose the best possible period represented by low unemployment and high aggregate demand. The use of such constitutional provision is very much obvious in the election dates of Turkish political history, which indicate that Turkish governments have yet to complete their entire term, as they call early elections either after four years or even before.

1.3. EMPIRICAL MODELLING AND SPECIFICATIONS

Since political manipulation of fiscal and monetary instruments can be treated as *intervention* which yields cyclical shifts in the mean value of the time-series data of the particular fiscal and monetary policy variable, it is reasonable to model the opportunistic political business cycles within intervention analysis. For this, Box-Tiao Intervention Analysis (Box-Tiao, 1975) is utilised which, in the case of this research, aims to search if the elections can render additional explanations in the relevant fiscal and monetary policy/and instrument time-series (Beck, 1982 and 1987). Thus, the model attributes to the changes in the policy variables from its course to the elections.

1.3.1. Capturing the Impact of Elections

Following the literature, dummy variables are created to capture the impact of elections on fiscal and monetary policy and their instruments. Two types of electoral dummy variables were designed. Initially, to gauge the significance of general elections on the macroeconomic variables standard electoral dummy variables were used. The survey of the literature indicates that regardless of the way the election date is determined, these standard dummy variables are used. Therefore, although an election date is determined exogenously in Turkey, or are unscheduled, the election dummy variables are adapted by this study in light of above statement.

These standard electoral dummy variables and their definitions are as follows:

ED1 = 1 in the election quarter
= 0 otherwise

ED2 = 1 in one quarter prior to an election and the election quarter
= 0 otherwise

ED3 = 1 in two quarters prior to an election and election quarter
= 0 otherwise

ED4 = 1 in three quarters prior to an election and election quarter
= 0 otherwise

ED5 = 1 in three quarters after an election
= 0 otherwise

With regards to the expected signs of the election variables, it is expected that the pre-election variables, ED1, ED2, ED3, and ED4, should have positive signs to imply the impact of elections in terms of increased levels of the policy instrument. However, post-election variable ED5 indicates otherwise, to signify the contraction of the economy in the post-election period. It should however be noted that in the case of inflation, pre-electoral variables should denote decreases and hence should have negative signs, while the post-election variable should have a positive sign to reflect pre-election expansionary policies.

Although these election variables represent *intervention*, they do not take into account the timing of elections, as mentioned, which is an issue for this study. Since the election dates are not fixed in Turkey by the Constitution, this implies that in the case of Turkey,

the electoral cycles in the fiscal and monetary policy and instruments cannot be convex or U-shaped as stated by Nordhaus (1975). This is consistent with Nordhaus' own statement, which suggests that in countries with endogenously determined election dates, the shape of the electoral policy cycles would not be U-or reverse U-shaped.

In Turkey, elections are normally unscheduled and, thus, called earlier than the five years due date implies that there is uncertainty about the election dates, which will only be known by the incumbent government in light of the developments in economy and politics. A further implication of this uncertainty is that the incumbent government would face uncertainty until they have some sort of idea when the best time would be for them to hold elections. Therefore, this imposes a constraint on the incumbent government to manipulate the economy as it may wish to do. As a result, such uncertainty prevents the incumbent government from manipulating the fiscal and monetary variables over the entire election period, but probably limit it with the campaign period, which is the period from the dissolution of parliament and the actual election date, namely three months. As a result, U-shaped or convex electoral business cycles over the fiscal and monetary policies cannot be created, incumbent governments know the exact date of the election on which they can actually hold elections. Otherwise, they may end up in the wrong sections or timing of the opportunistic political business cycles. Therefore, in addition to the official three-month period, arbitrarily attributing another nine months, hence a total of one year should provide a reasonable period for the government to initiate opportunistic policy cycles to boost its chance of re-election. It should be noted that this is not necessarily an arbitrary decision, but the observation would prove that around 10-12 months before the election the first signs of manipulation commence, such as the increase in the wages of public sector workers, a rise in agricultural purchasing prices, and the delay of the non-inevitable price increases of the State Economic Enterprises (SES).

Despite not demonstrating the U-shape, the electoral dummy variables defined for this study are expected to locate the impact of elections on fiscal and monetary policies and instruments, and are thus expected to fulfil the original Nordhausian predictions. However, following Ito and Park (1988: 236), Ito (1990: 150) and others, two more dummy variables are included to analyse the full impact of the elections on macroeconomic variables: TSLE and PREL. By taking into account exogenously determined elections, these additional electoral dummy variables prevent the occurrence of the simultaneity problem, which may come into existence as a result of having timings of elections to impact the manipulation of the economy. In addition, these election variables define the possible election oriented policy cycle shapes in countries where election dates are exogenously determined. These additional electoral dummy variables are defined as follow:

TSLE refers to the *time elapsed since last election.* Thus, from one election to another each quarter is counted from 1 to the election quarter of the following election. TSLE implies that the higher the number of quarters, the higher is the government's motivation towards the manipulation of the economy, as higher quarters imply that election time is approaching. Figure 1. depicts the TSLE for the general parliamentary elections for 1980Q1 and 2003Q3, where it can be seen that maximum points refers to elections.

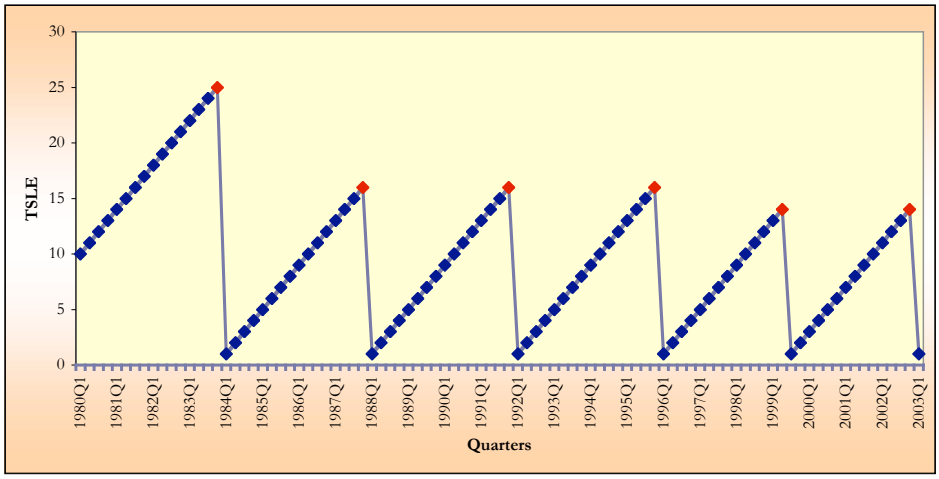

Figure 1. Trend in the Election Variable TSLE

Note: Red colour marked points stands for election quarters

PREL denotes the "post probability distribution of elections as a function of TSLE" (Ito, 1990: 150). It is constructed as the fitted value of the Probit estimation of elections as a function of TSLE. It should be added that it is assumed that the voters are aware of the PREL. It implies the impact of the probability of the approaching elections on the fiscal and monetary policy instruments. Figure 2. demonstrates PREL for the 1980M1 to 2003M3, where each maximum points indicates an election.

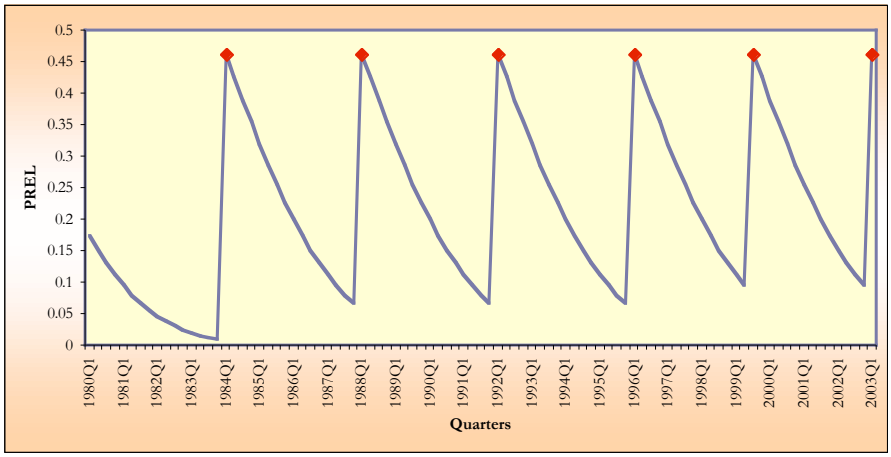

Figure 2. Trend in PREL, Probability Distribution of Elections

Note: Red colour marked points stands for election quarters

The additional election variables, TSEL and PREL, establish correlation between the time period of the elections and the level of, for instance, government expenditure. Positive sign and t-test significance would mean that the lesser the quarters between the elections, the higher the probability of a general election to be held and hence higher the government expenditure would be.

1.3.2. Econometric Modelling

Recent developments in time-series econometrics have yielded significant implications for econometrics application. The starting point of this is the robustness of the OLS estimates, as due to the econometrics time series properties of macroeconomic data the OLS estimates may yield *spurious regression* (Granger and Newbold, 1974). The reason for this is the trends inherent in economic variables, as most of the macroeconomic time-series follow a long-run trend (Price, 1998). The implication of this would be the invalidity of the significance test applied on OLS estimates.

In overcoming non-stationary in the econometric time series, the unit root test is suggested. To determine if each of the econometric time series to be used by this study has stationarity, first the natural logarithm of each variable is established to investigate if the variable contains any deterministic time-trend. The graphical depiction of each of the variables indicates a deterministic time-trend.

Following the method suggested by Enders (1995: 179), to remove the deterministic polynomial time-trends, each variable was regressed on a constant and on a polynomial time trend. The appropriate polynomial time trend is determined by checking the t-test in each regression. The process of de-trending or the appropriate level of polynomial time-trend for each of the variable or policy instrument is depicted in table 1 in the appendix section.

For the quarterly data the next step is to eliminate the impact of seasons, namely the time-series need to be *seasonally-adjusted*. The trend-adjusted time series are seasonally adjusted by following the conventional method of regressing each variable on a constant and three quarterly dummies by taking the last quarter as the reference quarter (Gujarati, 2003: 315). Gujarati suggests that saving the residuals of such a regression will result in seasonally-adjusted time-series.

The next step in investigating the time-series nature of the economic variables includes the confirmation of the *stationarity* of the series. For this, the *unit root* test is utilised. Since time-series data have already been de-trended and de-seasonalised, the unit root tests confirms the stationary nature of the time-series. The results of the Augmented Dickey-Fuller test as used in unit root test are reported in table 2 in the appendix section.

After ensuring that the time-series are stationary, the study is modelled as *ARMA* (*AutoRegressive Moving Averages*). The idea stem from Box-Tiao's (1975) *intervention analysis*. This implies that by modelling through ARMA it is then possible to demonstrate if elections in addition to the past history of each variable and the random error term can provide explanation for the changes taking place in each policy instrument. This process requires the identification of ARMA benchmark models, for which parsimonious representation of the exact data generating process that governs the residuals was established. Box-Jenkins methodology (1975) as reported by Gujarati (2003) suggests the use of correlograms of the ACF (autocorrelation function) and of the PACF (partial autocorrelation function)[ξ]. However, Gujarati (2003) and Enders (1995) further suggest that in deciding the benchmark model, other processes (MA-Moving Averages and ARMA and ARIMA-AutoRegressive Integrated Moving Averages) should be examined.

[ξ] Enders (1995) and Gujarati (2003) provide the details of the process and guide the readers in a very clear manner through each step.

Using and examining ACF and PACF demonstrate that partial autocorrelations were zero after one lag, which implies that the residuals of each variable are governed by a first-order autoregressive process.

Following Gujarati's advice (2003) to check the performance of other models, it was found that AR(1) performs better than other ARMA processes. This implies that in the case of the economic time-series variables used in this study, AR(1) was utilised as the most parsimonious benchmark model.

After identifying the benchmark model, the estimation of each variable is then carried out by modelling each variable as univariate AR(1). The electoral dummy variables (ED1, ED2, ED3, ED4, ED5, TSLE and PREL) aimed at capturing the impact of elections included separately into AR(1) model to find whether elections has any impact on the econometric time-series utilised by this study in addition to each variable's past value and its respective error term. Thus, the impact of elections is considered to be an intervention or shock in the determination of the value of a variable by forcing the value of the variable to shift during the intervention or shock periods. The statistical significance of the political dummy variables is tested by using t-test. Consequently, if the coefficient of the political dummy variable is statistically significant and possesses the right sign it can be inferred that political manipulation exists and elections affected the fiscal and monetary policy/and instrument time-series. The estimation results are depicted in the appendix section tables 3-11.

It should be added in the case of monetary policy variables that an additional modelling strategy is followed. It is a fact that changes in the monetary variables due to the election stem from the use of fiscal policy for electoral purposes. Therefore, in addition to investigating the impact of each election variable, estimates are also carried out in the case of controlling the impact of fiscal policy on monetary policy. In other words, after carrying out estimates for each monetary policy instrument as described above, then each variable is fiscal policy adjusted. The rationale for this stems from the fact that if fiscal policy is used for electoral reasons, this imposes demand on the Central Bank. Thus, the objective is to find the consequences of the facilitatory attitude of the Central Bank by transforming the election variables into interaction variables in terms of interaction between monetary and fiscal policy in the election periods. Since it is difficult to differentiate fiscal policy as election oriented and non-election-oriented categories, the interaction variable provides an approximation for such differentiation. This interaction variable simply requires the multiplication of the electoral variables with the fiscal policy variable. Thus, in the empirical analysis each of the defined election variables has a prefix of *FA* denoting *fiscal policy adjusted*. As a result, as Beck (1987: 210) predicts, it then becomes possible to demonstrate if the Central Bank bent to the election oriented fiscal policy demands of the incumbent government. In the estimation, each of these interaction variables are introduced individually into univariate AR(1) model to find the monetary attitudes of Central Bank in relation to election oriented fiscal policy.

1.3.3. Data Specifications

Time-series data for fiscal and monetary variables for the post-1980 period were utilised. It should be stated that the length of the data for each variable mostly varies due to the available data. As a developing country where the importance of provision of statistical data has not been realised by the public sector agencies, it is rather difficult to assemble a systematic data set. However, every effort was put to reach as much quarterly and monthly data as possible to ensure the robustness of the data. Therefore, for

government expenditures the data can mostly be found as far back as 1980. However, this is not true for the monetary variables, which are surprisingly provided by the Central Bank.

It should be stated that the data were assembled from the electronic delivery system of the Central Bank of Turkey (CBTR).

As regards to the election dates, depending on the availability of the data, maximum six elections are covered: 1983, 1987, 1991, 1995, 1999 and 2002. The election dates and the corresponding quarters are:

Election Date	**Quarter**
6 November 1983	1983Q4
19 November 1987	1987Q4
20 October 1991	1991Q4
24 December 1995	1995Q4
18 April 1999	1999Q2
3 November 2002	2002Q4

1.4. EMPIRICAL RESULTS ON NORDHAUS THEORETIC WITH FISCAL POLICY INSTRUMENTS IN THE CASE OF TURKEY

The estimation procedure or strategy to find the impact of elections on fiscal policy instruments is presented in the previous section. This section aims to present the results of the empirical analysis fiscal policy models. The fiscal policy instruments presented in this section are as follow;

i. Government Expenditure,
ii. Non-interest Government Expenditure,
iii. Transfers to State Economic Enterprises (SEEs),
iv. Public Investment.

1.4.1. Government Expenditures and Opportunistic PBC

In light of the specifications prescribed above, this is an attempt to model the quarterly government expenditure for 1980Q1-2003Q1 within the Nordhaus model. The objective is to find if the election variables are significant and, thus, have any explanatory power to explain the changes that take place in government expenditures. The econometric analysis in this section covers the period 1980Q-2003Q1, and therefore analysis the impact of the 1983, 1987, 1991, 1995, 1999 and 2002 elections, a total of 6 general parliamentary elections.

The results of the analysis and tests are depicted in **table 3** in the appendix section. As the autoregressive results in table 3 demonstrate, all pre-election election variables, ED1,

ED2. ED3 and ED4 have positive signs, as expected, signalling increased government expenditure before elections. Accordingly, ED5, the post-election variable, which should indicate decreases in government expenditure in the post election period to combat the increased spending of the pre-election period to boost the likelihood of winning the election for the incumbent government, produced a negative sign in compliance with the prediction of the theory.

The t-statistical values of the electoral variables indicate the significance level of the election variables. According to the t-statistics depicted in table 3, ED3 and ED4 are not statistically significant, while ED1 is statistically significant at 5% and ED2 and ED5 are significant at 10% level of significance. This implies that, after controlling for seasonal and trend factors, government expenditure increases during the election quarter and one quarter before the election quarter, which provides the government with a total of six months to surf the economy through boosting its likelihood to win an election.

The additional election variables, TSLE and PREL, both have the expected signs and are significant at 5% level of significance. This implies that the increasing number of quarters alerts the incumbent government for the coming elections, and hence the probability of elections increases. This results in increases in government expenditure due to the high probability of an approaching election.

The coefficient of the significant variables enables one to gauge the impact of elections. Accordingly, ED1 implies that government expenditure is 1.6% higher than otherwise in the election quarter, and the coefficient of ED2 states that government expenditure is 1.25% higher than otherwise in the quarter before the election and the election quarter. By the same token, ED5 indicates that government expenditure declines by 1.2% in the post-election period in comparison to the non-election month.

Consequently, as table 1 demonstrates, the significance of electoral variables ED1 and ED2 provide evidence that incumbent governments in Turkey significantly increase their expenditure in the election quarter and the preceding quarter. The significance of ED5 is again evidence of opportunistic business cycles, as it indicates decreases in government expenditure after the election. As the TSLE indicates, government expenditure in relation to an election increases with the number of quarters that have elapsed since the last election increases. The results confirm that incumbent governments in Turkey, as elsewhere, manipulate the economy through government expenditure, and hence create opportunistic political business cycles.

1.4.2. Non-Interest Government Expenditures and Opportunistic PBC

Government expenditures are further examined by breaking down as non-interest government expenditures. In other words, government expenditure minus the interests paid on debts is the subject of analysis in this section. The reason for choosing non-interest government expenditure is to isolate the impact of the huge interest payments made on debts, and hence to have a better understanding of, and measure for, the changes in government expenditure.

Due to the data limitation, the analysis in this section covers the period 1985Q-2003Q1, and therefore analysis the impact of the 1987, 1991, 1995, 1999 and 2002 elections, a total of 5 general parliamentary elections.

The results are depicted in **table 4** in the appendix section, where the estimation results demonstrate that all the election variables have the expected signs. However, ED1, the election quarter, is not statistically significant, while the remaining electoral variables demonstrate various degrees of statistical significance. ED2 (one quarter prior to the election quarter and the election quarter), and ED4 (three quarters prior to the election and the election quarter) have positive signs as expected and are statistically significant at 10% level. ED3 (two quarters before the election and the election quarter) indicates a 5% level of significance. ED5 holds the expected negative sign, as it is predicted that government expenditure should decrease for contracting the economy after election period is over. ED5 is also significant at 10% level of significance. As before, TSLE and PREL, the additional election variables are significant at 10%. Since an increased number of quarters from one election to another indicates a high probability of election, as a result government expenditure increases. Therefore, TSLE is significant and has positive sign. This confirms the significance of PREL as well, which indicates that with the increasing quarters the probability of an election being called increases, which then triggers the politically-manipulated fiscal policy with the opportunistic attitude of the politicians. The PBC is, hence, a result of this process.

The magnitude of the coefficients informs that the non-interest government expenditures are higher in the election period than otherwise. For instance, ED2 indicates that the non-interest government expenditure is 3.9% higher in the pre-election quarter and the election quarter than is otherwise the case. The coefficient of ED4 refers to 4.5% higher non-interest government expenditure than otherwise in the two quarters before the election and the election quarter.

The evidence in this section provides support for the opportunistic PBC in non-interest government expenditure.

1.4.3. Transfers to State Economic Enterprise and Opportunistic PBC

The real life experience as well as the analysis of the related data indicate that State Economic Enterprises (SEEs) involved in the process of the manipulation of the economy through, for instance, rises in agricultural purchasing prices during election years, or the increased number of public sector employees in the election years. Examples of SEEs involvement in the creation of election cycles are more visible or observable during election periods. This section is an attempt to analyse the impact of elections on fund transfers made to SEEs from the consolidated budget. The objective is to demonstrate if elections can function as an additional explanatory factor in the trend of time series of transfers to SEEs in addition to its past value. In other words, this is an attempt to find if there is an intervention in the course of the development transfers to SEEs.

To fulfil this objective, quarterly data from 1985Q1 to 2003Q1 was analysed including the 1987, 1991, 1995, 1999 and 2002 elections, a total of 5 general parliamentary elections.

The results presented in **table 5**, which illustrate, except for ED1, all the other election variables have the expected signs. However, most of the election variables are insignificant: ED1, ED2, ED5, TSLE and PREL. Thus, only ED3 and ED4 are statistically significant, which are respectively significant at 10% and 5%. Although, ED5

has the correct sign (-) as it is expected that the transfers to SEEs to decline after the election, the results indicate it is not statistically significant.

The coefficients of the significant variables indicate the changes in the course of the transfers to SEEs as a result of the election intervention. The coefficient of ED3 indicates that transfers to SEEs is 2% higher than otherwise in the two quarters prior to the election and the election quarter, while the coefficient of ED4 shows that transfers to SEEs is 2.6% higher than normal in the three quarters prior to the elections.

As a result, in the case of transfers to SEEs, weak support is found for opportunistic political business cycles. It seems that only one quarter preceding the election and two quarters preceding the elections, together with the election month, are significant. This implies that the incumbent government commences to increase transfers significantly 3-6 and 6-9 months before the elections, and hence does not leave it to the election quarter. This is consistent with real-life experience. Somehow most of the elections since 1983, except for 1999 elections, have taken place in the final quarter of the year. However, the government declares the purchasing prices for the agricultural products of which one of the SEEs is the biggest buyer. This would only take place in spring, and a government, which prepares discreetly for the coming election, would declare a high purchasing price. This, then requires additional transfers of funds to the SEEs.

In conclusion, the weak results produced by the analysis in this section still indicate consistency with real-life experiences, and hence are helpful in explaining the opportunistic political business cycles created by incumbent governments to enhance their chances of re-election.

1.4.4. Public Sector Investment Expenditures and Opportunistic PBC

It is observed that incumbent governments attempt to keep investments to the election months, and start investment projects in the fields with huge ceremonies to exploit the myopic nature of the electorate. Therefore, investigating investment expenditure might shed further light on the opportunistic use of fiscal policies for electoral success.

The data for government investment expenditures covers the period 1980Q1-2003Q1, and hence this section analysis the impact of 6 parliamentary elections (1983, 1987, 1991, 1995, 1999 and 2002).

The autoregressive results are presented in **table 6**, which demonstrates, all the election variables have the correct sign, and hence are consistent with the prediction of the theory. As expected ED5, the post-election dummy variable has a negative sign, which implies that investment declines three quarters succeeding the election.

With regards the significance of each of the variables, ED1, the election quarter, and ED2 the quarter before the election quarter and the election quarter are significant at 10%. However, other election variables are not statistically significant. The t-statistics of ED3 and ED4 are very close to the 10% significance level and indicate a close proximity for election manipulation in two quarters and three quarters pre-election manipulation of government investment. The post-election variable, ED5, has the same significance level as PREL, but its significance is far from the acceptance level. TSEL is not significant in the case of public investment expenditures.

The results, as analysed, indicate a certain degree of support for the opportunistic PBC in the case of investments from the consolidated budget. In particular the coefficient of ED1 implies that during election quarters investment is 5.1% higher than otherwise, and in the quarter preceding the election and the election quarter, government investment is greater by 53% than otherwise. These directly refer to opportunistic government investment cycles created by the incumbent government to boost its chance of re-election.

The analyses provide satisfactory evidence to conclude that governments increase public investment during the six months prior to elections to exploit the myopic nature of the voters in its attempt to increase its popularity and its likelihood of re-election. In conclusion, the analysis provides evidence for the presence of PBC in government investment during the six election periods from 1980Q1 to 2003Q1.

1.5. EMPIRICAL RESULTS ON NORDHAUS THEORETIC WITH MONETARY POLICY INSTRUMENTS

This section furthers the analysis to examine the case for monetary policy instruments. If the government intervenes and changes the course of fiscal policy in its favour, this can only be achieved in relation to monetary policy. In doing so, this section will analyse the following monetary policy instruments in accordance with the above presented theoretical and empirical specifications:

i. Money in circulation,

ii. M1,

iii. M2Y,

iv. Domestic credit,

v. Consumer price index, or inflation.

1.5.1. Money in Circulation and Opportunistic PBC

Since elections take place with large campaigns it is normal that 'money in circulation' (MIC) increases during an election period. However, the preceding analyses of fiscal policy instruments indicate that governments in the past have exploited fiscal policy for electoral profiteering or to boost their chances of re-election. This inevitably involves the use of money. The result expected from this is the manipulation of monetary variables, which involves increasing the amount of money injected into the economy. Thus, it has two aspects: injection of money into the economy due to election campaigns, and secondly the use of fiscal policy necessitates the injection of additional monies into the economy.

The data in this section covers the 1986Q1-2002Q3period, and hence the 1987, 1991, 1995, and 1999 elections. **Table 7** depicts the detailed results of the autoregressive modelling. All the election variables have the correct and expected signs. The electoral variable, ED5 has a negative sign as expected. In addition, except for ED3 and ED4 all other election variables are statistically significant. While ED1, ED2 and TSLE are significant at 10%, ED5 and PREL are significant at 5%.

The signs and the significance of most of the election variables indicates the existence of the opportunistic PBC in the 1987, 1991, 1995, 1999 and 2002 elections in Turkey

through the use of the monetary variable, money in circulation. The significance of ED1 and ED2 demonstrates that governments commenced the injection of additional money into the economy for election purposes from the quarter before the election quarter and continued to so during election quarters. The coefficient of ED1 implies that money in circulation is about 4% greater in the election quarters than otherwise, whereas in the quarter before the election quarter it was about 3.4% greater than otherwise. The significance of ED5, the post-electoral variable, indicates that governments pursue contractionary economic policies after the election by decreasing the money levels in the economy.

The significance of additional election variables enhances the robustness of the results. Since TSLE is significant, it can be interpreted that the increasing quarters from the last election increase the probability of calling an election, which in turn indicates the increased injection of money into the economy by the Central Bank to meet the government's demand of high spending for electoral purposes.

The analysis concludes that governments manipulate the 'money in circulation' prior to an election to enhance its chances of re-election or simply to *buy* votes.

1.5.2. Monetary Instrument M1 and Opportunistic PBC

After establishing that governments have in the past initiated increasing money circulation in the economy or the money base during and pre-election quarters, this section aims to investigate the developments in M1 *vis-à-vis* elections and government manipulation.

The data for M1, which cover 1986Q1-2002Q3, and thus covers the 1987, 1991, 1995, and 1999 elections.

The results are presented in **table 8**, where the results demonstrate that except for the additional election variable, all the election variables have the correct signs including post-election variable ED5, which has a negative sign.

With regards to the significance of the variables, except for ED1, ED2 and ED5, all other variables are insignificant. ED1, ED2 and ED5 are all significant at 10%. This implies that the government manipulates M1 as a monetary instrument in the quarter prior to the election and in the election quarter. In these quarters, as the coefficients of the respective variables indicate, M1 is 2.5% higher than otherwise in the election quarter and 4.2% higher than otherwise in the quarter prior to elections. The decline in M1 in the post election quarters, as indicated by ED5, is 2.8% higher than otherwise.

While it is true that other election variables did not produce any significant support for the use of M1 for electoral purposes, the evidence provided by ED1, ED2 and ED5 is sufficient enough to conclude that governments initiate increasing M1 money levels in the economy in the six months prior to the election. In other words, the evidence is sufficient enough to conclude that the government opportunistically uses M1 to buy votes or enhance their chances of winning the approaching election, thereby contribute to the creation of PBC in the economy. The cycle is unambiguous in the performance of the significant electoral variables, as ED1 and ED2 indicate increased M1 through election intervention, but ED5 indicates the decline in M1 in the post-election quarters.

1.5.3. Monetary Instrument M2Y and Opportunistic PBC

To complete the analysis of electoral use of monetary instruments, M2Y is used to investigate the opportunistic business cycle in Turkey for the period 1986Q1-2002Q3 covering 1987, 1991, 1995, and 1999 elections.

The detailed results of the analysis can be found in **table 9**, which demonstrates that all electoral variables have the expected signs, which included ED5, the post-election variable. In addition, all election variables, except for ED4, are significant in various significance levels. ED1, ED2, ED5 are significant at 5%, while ED3, TSLE and PREL are significant at 10%.

The significance of electoral variables confirms the results produced in the previous sections by other monetary variables. Accordingly, it can be stated that governments from 1986Q1 to 2002Q3, including the 1987, 1991, 1995, 1999 and 2002 elections, opportunistically used M2Y as part of their manufacturing of PBC in the case of Turkey.

The results indicate that three quarters prior to the election including the election quarter the government is involved in surfing the economy in an interventionist manner by shifting levels of M2Y. This is evidenced from the coefficients of the electoral variables. For example, the coefficients of ED1 and ED2 demonstrate that due to elections M2Y is about 2.8% higher than otherwise, and ED5, the post-election variable, indicates that M2Y is 2.1% lesser than otherwise. These results provide evidence for monetary PBC.

The right signs of TSLE and PREL and their significance level confirm the robust analysis results. TSLE demonstrates that due to the increasing quarters from the last election, the M2Y is higher by around 7% than otherwise. Again since increasing number of quarters from the last election period increases the probability of elections to be called, the coefficient of PREL indicates that M2Y is 2% higher than otherwise.

It can therefore be concluded that intervention analysis sheds light on the understanding of the use of M2Y for electoral purposes by past governments in Turkey. The results confirm that such a political attitude functions from nine months prior to the election, or two quarters and the election quarter. The results of TSLE and PREL support this. The results in general support the hypothesis of government use of monetary policies for electoral success purposes or buying votes to ensure their return to office after the election.

1.5.4. Domestic Credits and Opportunistic PBC

The Central Bank of Turkey provides domestic credits to public sector agencies and in particular to the SEEs. The rationale for utilising the domestic credits in the search for PBC is thus due to the fact that the public sector agencies and the SEEs may require short-term credits from the Central Bank to accommodate the government's attempts to manufacture a policy cycle in the country to boost its chances for re-election.

The data in this section covers 1986Q1 to 2002Q3, and thus covers the 1987, 1991, 1995 and 1999 elections by missing the election quarter of the 2002 election. It still covers the two quarters preceding the 2002 election.

The results of the autoregressive analysis are presented in **table 10**, which demonstrates, all the election variables have the right signs, including the post-election dummy variable ED5. Among the pre-election variables only ED1 and ED4 are statistically significant at 10% level of significance. ED2 and ED3 fail to pass the significance test. ED5, the post-electoral variable performed better than the others and is significant at 5%. Additional election variables TSEL and PREL are both significant at 10%.

The results indicate that the Central Bank accommodates the fund needs of public sector agencies by providing domestic credits in the election periods. The significance of ED1 indicates that domestic credits increase in the election quarter, and three quarters prior to elections as indicated by ED4. The coefficients of these variables, respectively, imply that domestic credits are 1.5% higher in the election quarter than otherwise and 1.65% higher in the three quarters preceding the election quarter than otherwise. This shows the impact of elections as a variable on domestic credits, and how the incumbent government uses it opportunistically.

The significance of the post-election variable ED5 indicates the closure of the cycle created in domestic credits, as the coefficient of the variable indicates that decline in domestic credit is 2.4% higher than normal. Thus, the government's attempt to contract the economy after the election impacts domestic credits as well.

The additional electoral variables enhance the strength of the equation despite the fact that ED2 and ED3 is not statistically significant. The significance of TSEL indicates that the longer the period from the last election, the higher the government's motive to manipulate domestic credits, albeit the coefficient of the TSEL is rather low. PREL indicates how the increasing probability of the coming elections induces governments to manipulate the economy, as it seems that such a probability results in the government increasing domestic credits by 52% than otherwise.

The results provided by the autoregressive analysis of the domestic credits provide further evidence and support for the presence of politically-manufactured cycles in economic variables, or the creation of PBC in this case through the use of domestic credits.

1.5.5. Inflation and Opportunistic PBC

High inflation has become the norm in economic life in since the early 1970s in Turkey. Therefore unless there is a dramatic change in inflation, the developments in inflation do not make much news either. This is the same with unemployment. However, people somehow still keep their reactions against inflation, which may result in pocket-money oriented voting.

The rationale for including inflation in this analysis is due to the fact the SEEs produce and distribute important consumption goods and services. In a very highly inflationary environment, they do increase their prices regularly, which is usually broadcast on news media. However, election periods cause great sensitivity on the side of the government to keep quiet about price increases by deferring them to the post-election period. Thus, after each election it is common to hear opposition parties accuse the returned party for using the myopic characteristic of voters to boost their probability of winning the election. However, if the incumbent party losses the election, despite deferring price increases, then the winning party would again accuse the former incumbent party for

leaving a huge economic burden by not increasing the prices of SEEs produced and distributed goods, as this has to be fulfilled by the new government who would immediately receive a negative point in its honeymoon period. Thus, inflation or price increases seem to be a rich field to look for opportunistically created business cycles in the country. It should be noted that the data for this period cover 1987Q1 to 2003Q1, and hence includes in its analysis the 1987, 1991, 1995, 1999 and 2002 elections.

The results are depicted in **table 11**, which demonstrates all the election variables have the expected signs: pre-election variables have negative signs as expected, which is due to the fact that governments attempt to create low inflation or price increase periods prior to an election. Accordingly, post-election variables have positive signs, as inflation is expected to increase after the election due to the deferred price increases, as well as due to the general impact of the manipulation of the economy.

With regards to the statistical significance of the variables, table 9 demonstrates that only the ED1 election variable is statistically significant at 10%. Electoral variable ED4 is insignificant only at the margin, and therefore there is an indication towards statistical significance in ED4. As regards the impact of the election on ED1, it seems that inflation is around 3.8% lower in the election quarter than otherwise.

Having only one election variable to be significant does not undermine the robustness of the analysis. On the contrary, the results provide evidence that the government attempts to control inflation or price increases in the election quarter with the understanding that voters are myopic and would only remember the last months or quarters. In addition, as regards to inflation, the realities of the country have to be taken into account. Living in conditions of high inflation does not facilitate the deferral of price increases, as prices should be adjusted continuously. Otherwise, when the price increase is not reflected but kept and financed by the government, it may encounter a much greater economic problem. As a result, the government cannot defer price increases in the long-run and therefore they must confine their opportunistic manipulation of inflation only in one quarter, namely the election quarter.

1.6. EMPIRICAL RESULTS ON NORDHAUS THEORETIC WITH MONETARY POLICY INSTRUMENTS INTERACTING WITH FISCAL POLICY

The previous two sections have independently focused on fiscal and monetary policy instruments in investigating the existence of PBC in Turkey in various election periods. As mentioned, governments most of the time use fiscal policy instruments in their attempt to boost the economy for their electoral success. The case for fiscal policy instruments is presented above, and the analysis indicates that Turkish governments in the past have used electoral variables for their private ends. The monetary policy instruments provided the same kind of conclusion as well. However, it is a fact, as mentioned previously, that the use of fiscal policy instruments requires the accommodation of such demands by the Central Bank. Thus, fiscal policy instruments create additional impact or intervention on monetary policy variables. Therefore, this section aims to analyse such an interaction in a more focused way. The previous sections provide enough evidence to establish such a link, but it is also important to directly or systematically investigate the interaction or the impact of fiscal policy manipulation on monetary policy due to elections.

For this objective, each electoral variable was interacted or multiplied with government expenditure, and the same econometrics time-series investigation was carried out. The new election variables have the FA (fiscal policy adjusted) prefixes.

The autoregressive, AR(1), results are reported in table 12, where the figures in brackets are t-statistics. The data covers the period 1986Q1 to 2002Q3, and hence includes the interventions of the 1987, 1991, 1995 and 1999 elections and the pre-election period of the 2002 elections.

Table 12 demonstrates that the Central Bank of Turkey facilitated the incumbent governments' demands by accommodating the election-oriented fiscal policy manipulations.

In analysing the results, it is obvious that in the case of Money in Circulation all the electoral variables have the expected signs. As can be seen from table 10, FAED1, FAED2, FAEDTSLE and FAEDPRLE are significant, respectively at 5%, 10%, 10% and 5% significance level. The post-electoral variable FAED5 is insignificant at the 10% margin, but in any case the magnitude of the coefficient is very low. All other significant election variables indicate that the Central Bank increases the money in circulation in the election quarter and previous quarters to accommodate the financing of increased government expenditure, as the money in circulation in the election quarter and the previous quarters is around 1.4% higher than otherwise. Additional interactive variables, FAEDTSLE and FEADPRLE provide further strength to the results, indicating the impact of time since the last election and hence the probability of the approaching election increases the money in circulation due to the increases in government expenditure.

As regards the monetary variable, M1, the results demonstrate that interacted electoral variables all have the expected signs. However, only FAED1, FAED2, FAEDTSLE and FAEDPREL are significant at 10%. This implies that the Central Bank commences to accommodate the demands from the incumbent government around six months prior to the election. For instance, in the election quarter, M1 is 3% higher than otherwise. In concluding, the results provide evidence for the central bank's accommodatory policies in M1 for the incumbent government's election-oriented expansionary policies.

The development in M2Y in relation to fiscal policy interacted election variables produced stronger results, as all electoral variables are statistically significant at 5% except FAED3 and FAEDPREL, at 10% level. Thus, the results evidence that the Central Bank accommodates fiscal policy throughout the election year, as all the fiscal policy interacted election variables, which extends to the entire year, are all significant. The significance of additional fiscal policy interacted election variables determines the inclination of the Central Bank towards accommodating the expansionary fiscal policy. The post-election election variable is significant as well, as it indicates the decrease in the M2Y in the post-election quarters, as it seems that in the post election quarters the M2Y is 1.82% lesser than otherwise.

The coefficient of the fiscal policy interacted election variables indicate that M2Y is higher between 1.65% (in the election quarter) to 2.76% (three quarters prior to the election) than otherwise. Thus, the impact of an election is established yet again.

1.7. CONCLUSION

This paper aimed to analyse the presence of politically manufactured business cycles or political business cycles in Turkey. So doing, it has adapted the Nordhaus model (1975) and attempted to model the Turkish case with fiscal and monetary policy instruments in the post-1980 period. The main understanding of the model is that governments pursue opportunistic fiscal and monetary policies to stir the economy in the pre-election period by boosting the economy to improve its chances of re-election. However, following the election, the government attempts to contain the impact of pre-election expansionary policies and attempts to contract the economy. It is important to note that the model assumes that voters are myopic, and hence vulnerable to manipulation and affected by positive developments in the pre-election period.

The empirical results are presented in three sections. The first empirical section analysed four fiscal policy instruments in relation to elections: government expenditure, non-interest government expenditure, transfers to SEEs and public sector investment. The second section presented the empirical results for the monetary policy instruments, which are money in circulation, M1, M2Y, domestic credits and consumer price index. The third empirical section presented the results for fiscal and monetary policy interaction, and analysed the impact of elections on monetary policy through the intervention or effect of the fiscal policy to find out the attitude of the Central Bank towards the fiscal demands of the incumbent government.

Table 13 brings together the main results of the analysis involving the policy instruments, the period coverage of data and the table where the results are depicted. It provides detailed information by identifying each statistically significant variable for each policy instrument and in the end provides a conclusion.

As the summary information in table 13 demonstrates, out of 12 models, one of them yielded *very strong* support for the opportunistic business cycles in Turkey. This is the fiscal policy adjusted/interacted monetary policy instrument, M2Y, in which five variables are significant at 5% and two of them at 10%. Five model performed *strongly* as six variables in Non-interest Government Expenditure model and M2Y model, and five variables Government Expenditure model, Money in Circulation model and Domestic Credit models are statistically significant. Government Expenditure, Money in Circulation and Domestic Credits models. Money in Circulation Fiscal Policy Interacted and M1 Fiscal Policy Interacted models are moderately strong, as in each four electoral variables are statistically significant.

M1 model as a monetary policy instrument demonstrated a relatively strong performance as in the model only three variables are statistically significant. Transfers to SEEs and Government Investment models produced relatively weak results with merely two statistically significant variables. It should, however, be noted that in the Public Investment model two more variables could be statistically significant as they were rejected at the margin. The Inflation or Consumer Price Index model yielded weak result, as only one election variable is statistically significant.

The statistically significant election variables refer to different quarter periods. Except for the Transfers to SEEs and Public Investment models, in all the models ED1 or the election quarter is statistically significant which indicates the presence of the opportunistic PBC in the election quarter in the remaining nine models. The post-election variable ED5 has performed well, but failed to be significant in four models

(Transfers to SEEs, Public Investment, and fiscal policy adjusted models of Money in Circulation and M1). Other election variables, as previously analysed, indicate one quarter, two quarters, and three quarters pre-election opportunistic PBC or the politically-manufactured business cycles in each of the mentioned variables. It can thus be confidently argued that elections as intervention creates additional impact on fiscal and monetary variables by moving the instrument from its course through the manipulative policies of the incumbent government to enhance its re-election likelihood.

Table 13. Summary of the Results

Policy Instrument /or Outcomes	Data Range	Location of Results	Significant Electoral Variables	Conclusion
Government Expenditures	1980Q1-2003Q1	Table 3	ED1[a]; ED2[b]; ED5[b]; TSLE[a]; and PREL[a]	Strong
Non-Interest Government Expenditures	1985Q1-2003Q1	Table 4	ED2[b]; ED3[a]; ED4[b]; ED5[b]; TSLE[b]; and PREL[b]	Strong
Transfers to SEEs	1985Q1-2003Q1	Table 5	ED3[b] and ED4[a]	Relatively Weak
Public Sector Investment	1981Q1-2003Q1	Table 6	ED1[b] and ED2[b] (ED3[c] and ED4[c])	Relatively Weak
Money in Circulation	1986Q1-2002Q3	Table 7	ED1[b]; ED2[b]; ED5[a]; TSLE[b]; and PREL[a]	Strong
M1	1986Q1-2002Q3	Table 8	ED1[b]; ED2[b] and ED5[b]	Relatively Strong
M2Y	1986Q1-2002Q3	Table 9	ED1[a]; ED2[a]; ED3[b]; ED5[a]; TSLE[b] and PREL[b]	Strong
Domestic Credits	1986Q1-2002Q3	Table 10	ED1[b]; ED4[b]; ED5[a]; TSLE[b] and PREL[b]	Strong
Consumer Price Index	1987Q1-2003Q1	Table 11	ED1[b]	Weak
Monetary and Fiscal Policy Interaction	1986Q1-2002Q3	Table 12	MIC: FAED1[a]; FAED2[b]; FAEDTSLE[b] and FAEDPRLE[a]; M1: FAED1[b]; FAED2[b]; FAEDTSLE[b]; and FAEDPREL[b]; M2Y: all variables[a] except for FAED3[b] and FAEDPREL[b]	MIC: Moderately Strong; M1: Moderately Strong M2Y: Very Strong

Notes: (a) indicates 5% significance level; (b) stands for 10% significance level; (c) could be significant at the margins of 10% significance level

It should be noted that the results have generally been better than what was expected at the beginning of the study, as they provide strong evidence for the opportunistic Nordhaus type political business cycles in Turkey. Therefore, it can be argued with the evidence that incumbent governments are involved in election-oriented fiscal and monetary policy-making for winning the approaching elections. They commence such policies sometimes around nine-to-twelve months prior to an election as the significance of ED4 indicates in some of the models. This implies the allocation of resources for unproductive purposes, as governments give way to populist policies. Therefore, during election years the stabilisation policies arranged in collaboration with the IMF have always given up for the sake of populist policies to buy votes to remain in power. As before each election governments have always expanded the economy through government expenditure and through injecting money into the economy. Although this study indicates the contraction of the economy after elections in certain cases, the realities of Turkey do not always allow that and the heat of the economy continues from one cycle and crisis to another. It seems that Nordhaus' (1975) prediction for the long-run is vindicated in Turkey, as from one election to another the economy keeps moving away from converging to the equilibrium, and hence optimality is lost forever in the economy.

With the analysis presented, theoretisation of the experience of what one observes in the field has been made possible. The econometric analysis in this study contributes to the understanding developed through experience by providing concrete and systematic evidence to support real life intuition or observation. It can therefore be concluded that, as evidenced by the analyses presented in this study opportunistic PBC have existed during elections in Turkey in the post-1980 period.

APPENDIX TABLES

Table 1. Degrees of Polynomial Deterministic Time Trend

Policy Instruments	**The degree of deterministic polynomial time-trends**
Government Expenditures	First-degree polynomial deterministic time trend
Non-Interest Government Expenditures	Sixth degree polynomial deterministic time trend
Transfers to SEEs	First-degree polynomial deterministic time trend
Public Sector Investment	First-degree polynomial deterministic time trend
Money in Circulation	First-degree polynomial deterministic time trend
M1	Sixth-degree polynomial deterministic time trend
M2Y	Fifth-degree polynomial deterministic time trend
Domestic Credits	Sixth-degree polynomial deterministic time trend
Consumer Price Index	Sixth-degree polynomial deterministic time trend

Table 2. Unit Root Test Results

Policy Instruments	**ADF Test**	**95% critical value for the ADF statistic**
Government Expenditures	-3.6071	-2.8929
Non-Interest Government Expenditures	- 6.2600	- 2.9048
Transfers to SEEs	- 6.7649	- 2.9017
Public Sector Investment	- 7.0991	- 2.8929
Money in Circulation	- 4.0148	- 2.9062
M1	- 5.8669	- 2.9055
M2Y	- 7.1377	- 2.9077
Domestic Credits	- 3.4236	- 2.9055
Consumer Price Index	- 6.6385	- 2.9069

Table 3. Seasonally and Trend Adjusted Government Expenditure, 1980Q1-2003Q1

Dependent Variable: Logged Government Expenditures (LGEXP)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coef	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.
Cons.	0.125	0.475	0.12439	0.4773	0.1292	0.500	0.1282	0.495	0.13836	0.5376	0.0906	0.3524	0.1604	0.6228
LGEXP(1)	0.489	13.288	0.4957	13.203	0.5012	13.481	0.4993	13.493	0.4936	13.353	0.4897	12.947	0.490	13.072
ED1	0.164	2.039												
ED2			0.1259	1.7520										
ED3					0.0378	0.4655								
ED4							0.0139	0.1726						
ED5									-0.1217	-1.854				
TSLE											0.0157	2.3880		
PREL													0.582	2.1562
Diagnostic Tests														
R^2	0.659		0.6527		0.64381		0.64301		0.65137		0.66485		0.66093	
AIC	-7.0294		-7.8900		-9.02227		-9.1193		-8.0423		-6.2460		-6.7736	
SBC	-12.0511		-12.9117		-14.0444		-14.1410		-13.0641		-11.2677		-11.7954	
F-stat.	56.102		54.5006		52.4169		52.1193		54.1827		57.5288		56.5290	
DW	2.204		2.2139		2.2262		2.2324		2.2217		2.1762		2.1832	

Notes: R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson d Statistics

Table 4. Autoregressive Seasonally and Trend Adjusted Non-Interest Government Expenditure, 1985Q1-2003Q1

Dependent Variable: Logged Non-Interest Government Expenditure (LNINGEXP)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-stati**
Cons.	-0.0057	-0.029	-0.0048	-0.1892	-0.00867	-0.03313	-0.0054	-0.209	0.0086	0.348	-0.0307	-0.995	0.030	1.0028
LNINGEXP(1)	0.4919	12.9243	0.5011	13.2505	0.495	13.481	0.4965	12.897	0.49397	12.962	0.49880	13.2041	0.4974	13.140
ED1	0.0145	0.5954												
ED2			0.03891	1.7596										
ED3					0.0455	1.999								
ED4							0.0216	1.8937						
ED5									-0.0424	-1.759				
TSLE											0.00036	1.7308		
PREL													0.1359	1.7556
Diagnostic Tests														
R^2	0.68		0.692		0.697		0.68		0.693		0.693		0.693	
AIC	90.57		91.8068		92.42		90.84		91.984		91.93		91.9	
SBC	86.01		87.25		87.86		86.29		87.4313		87.37		87.4	
F-stat	48.88		50.98		52.278		49.032		51.314		51.239		51.3	
DW	2.268		2.320		2.205		2.237		2.174		2.234		1.99	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 5. Autoregressive Seasonally and Trend Adjusted Transfers to SEEs, 1985Q1-2003Q1

Dependent Variable: Logged Transfers to SEEs (LTSEE)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**
Cons.	0.007	0.076	-0.010	-0.111	-0.0363	-0.3865	-0.064	-0.638	0.0186	0.1955	-0.070	-0.526	0.0878	0.6713
LTSEE(1)	0.510	10.481	0.516	10.624	0.51333	10.8243	0.5204	11.249	0.5110	10.551	0.513	10.692	0.5135	10.733
ED1	-0.036	-0.269												
ED2			0.1164	0.908										
ED3					0.2055	1.7096								
ED4							0.2637	2.2799						
ED5									-0.0729	-0.5717				
TSLE											0.0088	0.797		
PREL													0.379	0.933
Diagnostic Test														
R^2	0.59246		0.59695		0.60888		0.62067		0.59400		0.59579		0.59712	
AIC	-27.6943		-27.2988		-26.2212		-25.1435		-27.5608		-27.4156		-27.3002	
SBC	-32.2477		-31.8521		-30.7745		-29.6968		-32.1142		-31.9689		-31.8536	
F-stat	32.9522		33.5708		35.2867		37.0875		33.1624		33.498		33.5948	
DW	1.8321		1.9243		1.8847		2.0239		1.9384		1.8137		1.8749	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 6. Autoregressive Seasonally and Trend Adjusted Public Sector Investment Expenditure, 1980Q1-2003Q1

Dependent Variable: Logged Public Investment Expenditure (LPSINV)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**
Cons.	0.0171	0.179	0.0204	0.2131	0.0218	0.2263	0.0254	0.261	0.0075	0.0814	0.0738	0.661	0.0654	0.600
LPSINV(1)	0.533	14.278	0.5349	14.408	0.53342	14.2043	0.5355	14.430	0.529	14.1858	0.5327	14.284	0.5309	14.2522
ED1	0.051	1.718												
ED2			0.5364	1.8627										
ED3					0.040	1.5027								
ED4							0.0468	1.595						
ED5									-1.113	-1.366				
TSLE											0.0063	0.9628		
PREL													0.3618	1.3430
R^2	0.70312		0.703		0.702		0.703		0.707		0.7048		0.70777	
AIC	-5.2445		-5.2155		-5.3122		-5.2590		-4.4820		-4.9625		-4.5126	
SBC	-10.266		-10.2372		-10.339		-10.2808		-9.5037		-9.9843		-9.5343	
F-stat	68.6820		68.747		68.5382		68.6520		70.299		69.2669		70.2386	
DW	2.0285		1.9314		1.9314		1.9120		1.9613		1.9926		1.8281	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 7. Autoregressive Seasonally and Trend Adjusted Money in Circulation, 1986Q1-2002Q3

Dependent Variable: Logged Money in Circulation (LMIC)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**
Cons.	0.004	0.914	0.0081	0.175	-0.0018	-0.037	0.0016	0.0351	0.001	0.0220	0.0036	0.071	0.0016	0.033
LMIC(1)	0.515	11.100	0.487	10.008	0.5069	10.655	0.5065	10.593	0.5067	10.603	0.5062	10.583	0.5064	10.579
ED1	0.0454	1.899												
ED2			0.034	1.892										
ED3					0.0142	0.625								
ED4							0.0004	0.0188						
ED5									-0.0487	-2.2003				
TSLE											0.0260	1.9088		
PREL													0.0802	1.9953
Diagnostic Tests														
R^2	0.74892		0.74329		0.73569		0.73391		0.7340		0.733		0.73390	
AIC	85.3742		84.6820		83.7230		85.5172		83.5383		83.5214		83.5171	
SBC	81.3742		80.3332		79.3742		79.1684		79.1895		79.1726		79.1683	
F-stat	60.6507		58.8731		56.5972		56.0807		56.1365		56.0947		56.0804	
DW	2.0599		2.2673		1.9911		2.1428		1.9328		1.9383		1.9416	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 8. Autoregressive Seasonally and Trend Adjusted M1, 1986Q1-2002Q3

Dependent Variable: Logged M1 (LM1)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**
Cons.	0.0008	0.0593	0.0003	0.0027	-0.00245	-0.1609	0.0031	0.2091	0.0050	0.37376	-0.013	-0.644	0.0124	0.6705
LM1(1)	0.4971	9.013	0.4977	8.7345	0.5001	9.0703	0.4988	9.0466	0.5089	9.1914	0.5052	9.1421	0.5056	9.1457
ED1	0.0251	1.7686												
ED2			0.04256	1.814										
ED3					0.00783	0.4290								
ED4							0.1024	0.5817						
ED5									-0.0283	-1.6950				
TSLE											0.0014	0.8878		
PREL													-0.0611	-0.9893
Diagnostic Tests														
R^2	0.5856		0.57689		0.57789		0.57750		0.5888		0.58053		0.58172	
AIC	101.7519		101.0522		101.1171		103.2235		104.1435		103.4609		103.5580	
SBC	97.4032		96.7035		96.7684		98.8442		99.7642		99.0815		99.1787	
F-stat	28.7639		27.7239		27.8374		28.2490		29.6023		28.6024		28.7418	
DW	1.9629		1.8408		1.9450		1.9436		1.9053		1.9795		1.9564	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 9. Autoregressive Seasonally and Trend Adjusted M2Y, 1986Q1-2002Q3

Dependent Variable: Logged LM2Y

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**	**Coeff.**	**t-statis.**
Cons.	-0.362	-0.021	-0.0018	-0.1066	0.00228	0.1339	0.0050	0.2874	0.0003	0.02298	-0.006	-0.3356	0.0053	0.2751
LM2Y(1)	0.4960	6.4012	0.48978	6.4215	0.49696	6.4259	0.4791	6.2683	0.4909	6.3651	0.4925	6.4190	0.4922	6.4090
ED1	0.0281	2.099												
ED2			0.011	2.1415										
ED3					0.0289	1.7232								
ED4							0.0157	1.1031						
ED5									-0.0217	-2.1152				
TSLE											0.0783	1.7784		
PREL													0.0206	1.8182
Diagnostic Tests														
R^2	0.61690		0.61922		0.61770		0.62310		0.61531		0.61740		0.61695	
AIC	112.1326		112.3189		112.1989		112.6359		112.0044		112.1762		112.1409	
SBC	107.8463		0.039233		107.9126		108.3496		107.7181		107.8899		107.8546	
F-stat	31.6687		31.9819		31.7760		32.5132		31.4574		31.7361		31.6761	
DW	2.1791		2.0892		2.1750		2.0734		1.9551		2.1453		2.0476	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 10. Autoregressive Seasonally and Trend Adjusted Domestic Credits, 1986Q1-2002Q3

Dependent Variable: Logged Domestic Credits (LDC)

	Model 1:ED1		Model 2: ED2		Model 3: ED3		Model 4: ED4		Model 5:ED5		Model 6: TSEL		Model 7: PREL	
	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.
Cons.	-.00365	-0.305	-0.0013	-0.0655	-0.0004	-0.022	-0.0074	-0.6139	0.0016	0.1383	-0.014	-1.007	0.0081	0.5899
LDC(1)	0.5044	10.8774	0.52078	7.0974	0.52520	7.2547	0.5071	10.889	0.4990	10.9408	0.4949	10.4635	0.4946	10.4500
ED1	.01536	1.7205												
ED2			0.0048	0.34152										
ED3					0.69543	0.010								
ED4							0.0165	1.7035						
ED5									-0.0240	-2.2109				
TSLE											0.0013	1.9245		
PREL													0.5262	1.7790
Diagnostic Tests														
R^2	0.80303		0.69602		0.69543		0.80186		0.80884		0.80013		0.80061	
AIC	132.5421		119.7009		119.6390		132.3462		133.5190		132.0723		132.1583	
SBC	127.069		115.3216		115.2597		126.8721		128.0449		126.5982		126.6842	
F-stat	62.1724		47.3201		47.1892		61.7170		64.5251		61.0488		61.2328	
DW	1.9357		1.9471		2.0598		2.1915		1.9755		1.9100		1.8131	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 11. Autoregressive Seasonally and Trend Adjusted Consumer Price Index, 1987Q1-2003Q1

Dependent Variable: Logged Consumer Price Index (LCPI)

	Model 1:ED1		Model 2: ED2		Model 3: ED3		Model 4: ED4		Model 5:ED5		Model 6: TSEL		Model 7: PREL	
	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.	Coeff.	t-statis.
Cons.	-0.0016	-0.028	-0.0058	0.1006	0.005	0.8378	0.0183	0.2929	-0.0058	-0.0965	0.0012	0.01632	-0.004	-0.054
LCPI(1)	0.5034	11.3735	0.50123	11.4419	0.5019	11.3882	0.5051	11.627	0.50127	11.3624	0.5011	11.3850	0.5011	11.3697
ED1	-0.0387	-1.976												
ED2			-0.069	-0.9873										
ED3					-0.0390	-0.5505								
ED4							-0.075	-1.1794						
ED5									0.00522	0.07289				
TSLE											-0.007	-0.1161		
PREL													-0.0014	-0.0061
Diagnostic Tests														
R^2	0.63019		0.63446		0.63039		0.63704		0.62861		0.62867		0.62857	
AIC	12.3293		12.7025		1.8258		12.9155		12.1902		12.1944		12.1874	
SBC	8.0115		8.3847		8.0302		8.5973		7.8725		7.8767		7.8697	
F-stat	34.0812		34.7137		34.1108		35.1022		33.8512		33.8605		33.8455	
DW	1.8256		1.9499		1.8258		1.8721		1.9277		1.9261		1.9256	

Notes: Coeff.: Coefficient; t-statis: t-statistics; R^2: Coefficient of Determination (Goodness of Fit); AIC: Akaike Information Criterion; SBC: Schwarz Bayesian Criterion; F-stat.: F-Distribution Test; DW: Durbin-Watson *d* Statistics

Table 12. Autoregressive Results for Monetary and Fiscal Policy Interaction

	Money in Circulation	**M1**	**M2Y**
FAED1	0.0146 (2.2346) R^2=0.75410 *DW*=1.7874	0.030901 (1.6685) R^2=0.63988 *DW*=1.8459	0.16582 (2.2789) R^2=0.5376 *DW*=1.7803
FAED2	0.0138 (1.739) R^2=0.73390 *DW*=1.7455	0.009690 (1.69765) R^2=0.63535 *DW*=1.8653	0.21439 (1.8760) R^2=0.5347 *DW*=1.753
FAED3	0.0098 (0.004338) R^2=0.7290 *DW*=1.7422	0.004590 (0.10627) R^2=0.63493 *DW*=1.8650	0.01927 (1.9685) R^2=0.4982 *DW*=1.752
FAED4	0.002814 (0.5459) R^2=0.73487 *DW*=1.7566	0.002440 (0.60109) R^2=0.63484 *DW*=1.8659	0.27692 (2.0128) R^2=0.5129 *DW*=1.785
FAED5	-0.009335 (-1.0227) R^2=0.73840 *DW*=1.6874	-0.002101 (0.28580) R^2=0.57718 *DW*=1.7466	-0.1829 (-2.3769) R^2=0.4865 *DW*=1.788
FAEDTSLE	0.0160 (1.9882) R^2=0.73386 *DW*=1.7457	0.020042 (1.78077) R^2=0.57962 *DW*=1.7413	0.2789 (2.3678) R^2=0.4741 *DW*=1.7887
FEADPRLE	0.01402 (3.1984) R^2=0.77089 *DW*=1.6788	0.002632 (1.8995) R^2=0.58522 *DW*=1.7389	0.2768 (1.7979) R^2=0.4829 *DW*=1.752

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